

Conservation for the Future

*Pacific Region Fish & Aquatic
Conservation Program*

2016 Highlights

“Of all the questions which can come before this nation ... there is none which compares in importance with the great central task of leaving this land even a better land for our descendants than it is for us.”

Theodore Roosevelt



From left to right: Paul Henson, Amy Horstman, Craig Rowland, Roy Elicker touring the Salmon Superhighway. Photo: USFWS

For more than 140 years, the U.S. Fish and Wildlife Service has worked corroboratively with tribes, states, landowners, industry, and other partners to conserve and restore our nation's natural resources. In the Pacific Northwest and Pacific Islands, we use a network of 38 facilities including hatcheries, fish health centers, a fish technology center, and research field stations to restore endangered, threatened, or imperiled salmon, bull trout, and Pacific lamprey, protect and restore aquatic habitat, and fulfill tribal trust and mitigation responsibilities.

With the invaluable assistance of our partners and co-managers, each year we propagate more than 60 million salmon and steelhead a year to support West Coast ocean and river fisheries that provide billions of dollars and thousands of jobs. We work with others to restore aquatic habitat, generating millions of dollars in ecosystem services like clean water. We team up with state and tribal partners to prevent or minimize environmental damage by protecting our waterways and water infrastructure

from invasive species. We engage our citizens and connect them to nature through volunteer activities, education and outreach, and temporary employment programs.

Enjoy this report: it highlights some of last year's milestones that we are especially proud of and demonstrates our continued commitment to preserving and protecting our aquatic resources now and for generations to come.

*Roy Elicker
Assistant Regional Director
Fish and Aquatic Conservation Program*

Faces in Conservation



Cheri Anderson is the Columbia River Gorge Fisheries Complex's Information and Education Specialist. Cheri believes the keys to building and sustaining quality education programs are commitment and trust. For the past 18 years she's been a familiar face in communities throughout the Gorge, leading 4-H groups, kids fishing days, and overseeing a dynamic Salmon in the Classroom program that has introduced thousands of students to the remarkable life of salmon.



Mary Bayer has managed Warm Springs National Fish Hatchery since 2010. A Desert Storm veteran, Bayer has a passion for working with natural resources that dates back to her childhood. She's proud of the cultural connection and harvest opportunities her hatchery's Chinook salmon provide to Warm Springs tribal members. Mary champions collaborative conservation, diversity, and ensuring that the hatchery not only meets its propagation goals, but serves as a community resource now and for generations to come.



Marilyn "Guppy" Blair has been with the Service since 1996. Guppy is a Veterinary Medical Officer in the Idaho Fish Health Center, where her work conducting diagnostic examinations of adult salmon and steelhead at all life stages is analogous to CSI detective work for fish. She enjoys the opportunity to collaborate with diverse professionals within the Service, tribes, other agencies, and through partnerships. "We all work together with a common goal of helping the resource," she says.



Chuck Hamstreet has worked with the Service since the Ford administration. Hamstreet is a Biological Science Technician in the Mid-Columbia River Fish and Wildlife Conservation Office, where monitoring salmon returns and training the next generation of conservation professionals are Chuck's favorite parts of the job. Chuck's legacy is not only a point of pride for the Service, his 40 year career embodies the spirit of conservation and is an inspiration to those who work alongside him.



Ray Jones joined the Service in 1986. A recently-retired Fish Biologist with the Idaho Fish and Wildlife Conservation Office, Jones worked for 30 years monitoring salmon and steelhead raised in Nez Perce Tribe-owned and Idaho-based National Fish Hatcheries. Jones's research was key to ensuring hatchery production and harvest goals required under legal agreements and treaties were met. "We owe it to ourselves and future generations to be the best stewards of the earth we can be," Jones says.



Sharing Our Legacy

Leavenworth Fisheries Complex: A Focus Fixed on Fish for 75 Years

Leavenworth Fisheries Complex is celebrating over 75 years of service. The history of the Complex is linked to the history of Grand Coulee Dam.

Construction of Grand Coulee Dam in 1942 provided irrigation water to two million acres of farmland in Washington State, but at a tremendous cost: the upper river is completely blocked to the movement of fish. Four hatcheries were planned to mitigate for that impact under the Grand Coulee Fish Maintenance Project (GCFMP). Construction was completed on the first one—Leavenworth National Fish Hatchery (NFH)—in 1940, Entiat NFH followed in 1941, then Winthrop NFH in 1942.

Chief Joseph Hatchery, managed by the Confederated Tribes of the Colville Reservation, was completed in 2013. Complex staff share knowledge, expertise, and broodstock to support the Colville Tribes' hatchery program. The Yakama Indian Nation and Leavenworth NFH also use hatchery facilities—adjacent to a traditional Yakama harvest site on

Icicle Creek—to help re-establish a naturally-spawning Wenatchee River coho population.

The hatcheries' salmon and steelhead are raised and released into the Wenatchee, Entiat, Methow, and Okanogan rivers, boosting wild populations or re-introducing new ones. Monitoring, initiated in 1939, evaluates the impacts and effectiveness of the mitigation programs. The Mid-Columbia Fish & Wildlife Conservation Office (MCFWCO) joined the Complex in 1978 to continue carrying out the monitoring and evaluation.

But Grand Coulee Dam was not the only human impact to Columbia River Basin fish. Power dams, mill dams, unscreened irrigation canals, and heavy water use had decimated salmon runs by 1939. Under the GCFMP, salmon and steelhead were trapped at Rock Island Dam from 1939-1943 and transplanted to restore natural populations. Spring and summer Chinook salmon and steelhead were placed in the Wenatchee and Entiat rivers and in Nason Creek.

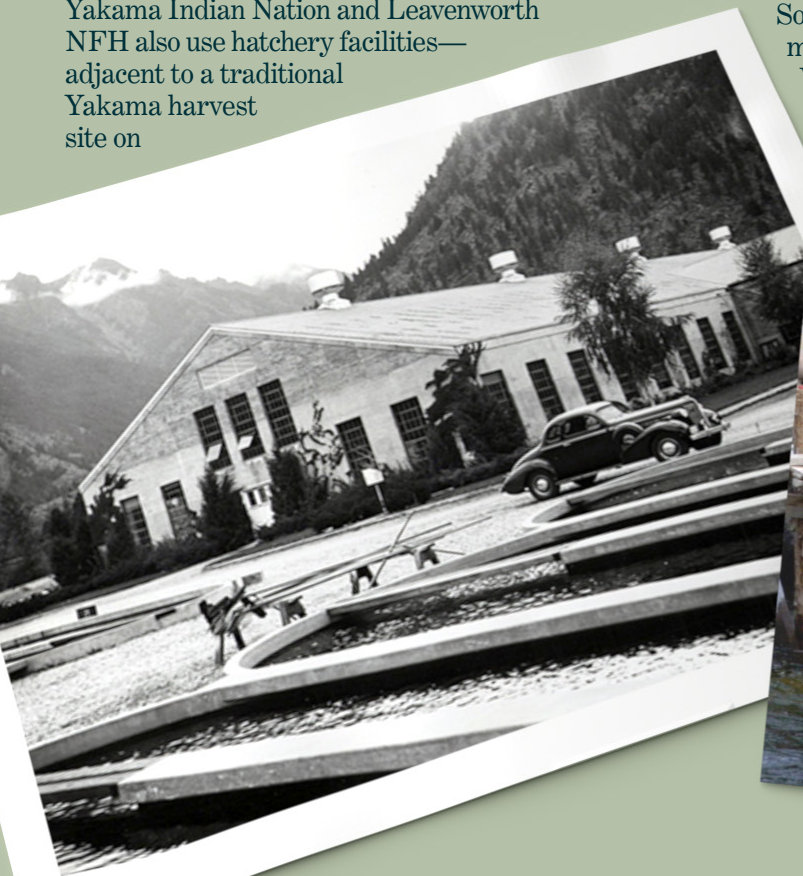
Sockeye salmon were moved to Lake Wenatchee and Lake Osoyoos.

Siting and building the hatcheries was based on where good water was available. At Leavenworth, for example, crews forged a trail to Snow and Nada lakes, which were dammed to trap summer snowmelt. Bureau of Reclamation engineers blasted through 2,500 feet of solid granite, forming a tunnel to draw lake water through a valve. Today, that alpine water feeds into Icicle Creek when hatchery workers open the valve in summer, bringing critical cool water to fish habitat and hatchery salmon.

Spawning ground surveys began in 1939 to evaluate the effectiveness of reintroduction program and continue to this day throughout all potential spawning habitat areas. In 1940, scientists began measuring hatchery impacts to wild fish runs by checking fish origins. It's a 76-year legacy continued by the MCFWCO's Hatchery Evaluation Program, which works closely with each hatchery to provide data that help managers hone their methods, meet program goals, and avoid harm to native fish populations.

Three quarters of a century have passed, and the success of the GCFMP can be measured both by the runs of salmon still returning to upper Columbia River

tributaries and the dedicated efforts of Complex staff and their many partners.



Left: Leavenworth National Fish Hatchery in 1947. Photo: USFWS. Right: Yakama Indian Nation members exercising Tribal treaty fishing rights on Icicle Creek.

A Time-Tested Plan for Lower Snake River Fish Returns



LOWER SNAKE RIVER
COMPENSATION PLAN
Hatchery Program

The Lower Snake River Compensation Plan (LSRCP), a cornerstone of Idaho salmon and steelhead sport angling and tribal harvests, has officially turned 40.

Established in 1976 by Congress to replace salmon and steelhead runs lost from the construction and operation of four hydroelectric dams on the lower Snake River, the LSRCP program ensures that each year 55,000 adult steelhead, nearly 59,000 adult spring or summer Chinook salmon, and over 18,000 fall Chinook salmon return for harvest in the Snake River and its tributaries.

The program embodies collaboration between federal, state, and tribal agencies. Administered by the Fish and Aquatic Conservation Program using funding provided by the Bonneville harvest goals are met using a combination of hatchery propagation and monitoring and evaluation programs run by the Nez Perce and Shoshone Bannock Tribes, Idaho, Washington, and Oregon Departments of Fish and Game/Wildlife, and the Service.

In September 2016, the LSRCP celebrated an additional milestone: the 20th anniversary of Idaho Salmon and

Steelhead Days. The Boise-based, multi-day education event has for two decades helped connect 3,000 area fifth graders, parents, and teachers each September to the cultural and economic value of Idaho's iconic migratory fish.

Anglers fish a Salmon Superhighway.
Photo: © Russ Spitzer



Celebrating 125 years of supporting commercial, tribal, and sport fish harvests

Little White Salmon National Fish Hatchery (NFH) in Cook, WA, began raising salmon in 1896 when William McKinley was President and there were 45 states in the Union. Now, 125 years later, the hatchery is not only still going strong, it's pitching in and helping other facilities raise fish and meet propagation goals, also.

Each year, Little White Salmon NFH rears and releases more than 5 million spring and fall Chinook to support Columbia Basin hydropower mitigation and U.S. tribal treaty responsibilities. The hatchery also raises and transfers more than 6.5 million fish and eggs to the Yakama Nation to support tribal salmon restoration efforts.

The Little White Salmon River's cool water temperatures and the

hatchery's extra capacity proved invaluable this summer and early fall when repairs at Carson NFH and high summer water temperatures at Warm Springs NFH left them scrambling to find temporary homes for their young fish.

This resulted in more than 1.7 million additional eggs making Little White Salmon NFH a temporary home, ensuring that hatchery programs critically-important to area tribes, commercial harvesters and sport fishing anglers could continue.

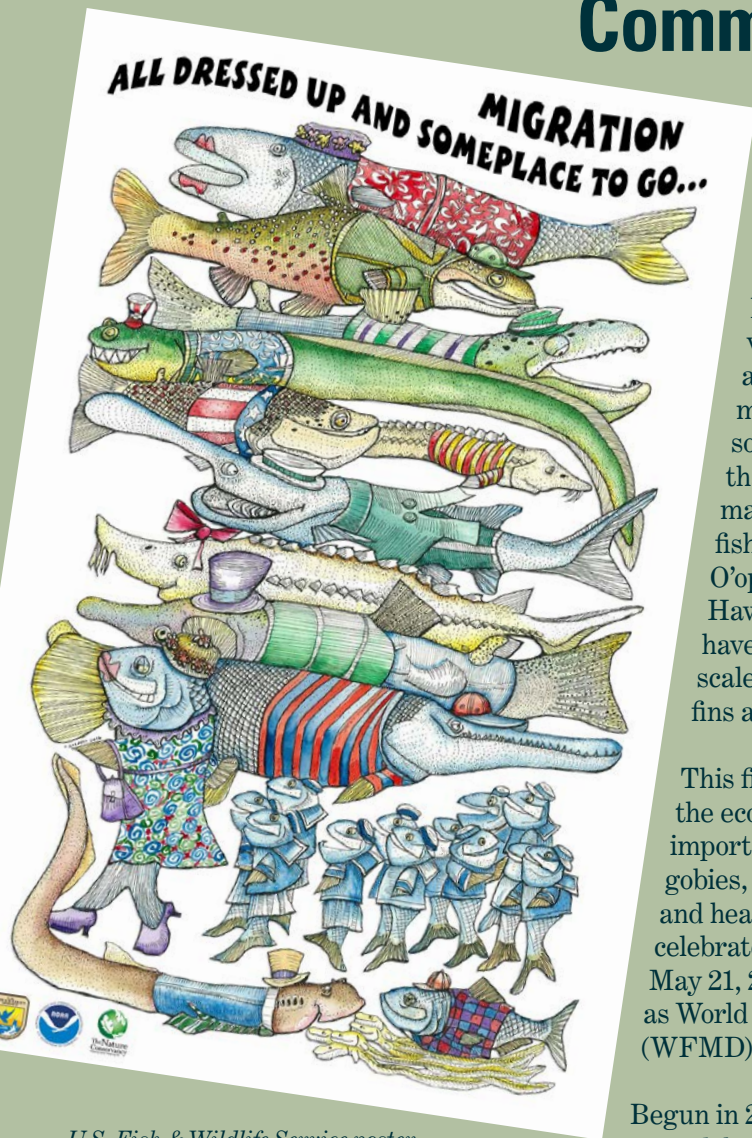
Carson and Warm Springs NFH eggs and fish have now been transported back to their 'home' basins, and the completion of Little White Salmon's own adult fall Chinook returns and spawning activities ensure the hatchery will, as usual, remain busy and full of life in the coming months.

But then again, if you've been in continuous operations for more than a century and play a key role in Northwest hatchery propagation, that's just how you go with the flow.



Hatchery spawning at Little White Salmon NFH. In addition to collecting eggs and milt to meet broodstock goals, Service employees check the health of returning adult fish and whether any are carrying tags used to track fish migration.
Photo: USFWS

A Culture of Service and Community Engagement



U.S. Fish & Wildlife Service poster commemorating World Fish Migration Day. Photo: Laury Zicari/USFWS

in New Zealand and officially ended with a celebration of native gobies at He'eia Stream on the island of Oahu.

The Service's Hawaii Fish Habitat Partnership teamed up with the Hawaii Conservation Alliance, Hawaii Department of Land and Natural Resource's Division of Aquatic Resources, Hawaii Department of Health's Clean Water Branch, Papahana Kūaloa, Hui O Koolāupoko, and other local watershed alliances to successfully complete Hawaii's first-ever WFMD event.

Over 50 volunteers participated to release native fish into He'eia, remove invasive stream-side vegetation, and listen as local scientists that highlighted the benefits of open rivers for Hawaii's native stream animals.

WFMD 2016 and the Lower He'eia restoration project highlighted other Hawaiian, community-based restoration efforts and the importance of volunteers.

World Fish Migration Day Says 'Aloha' In Hawaii

Hawai'i residents and visitors alike marvel at the island chain's magnificent waterfalls, some of which are more than 1,000 feet tall. What many don't know is that fish like O'opu akupa and O'opu naniha—two of five Hawaiian goby species—have developed an ability to scale them using only their fins and mouth.

This fin-tastic feat, along with the ecological and community importance of Hawaiian stream gobies, other migratory fish, and healthy waterways was celebrated internationally on May 21, 2016, better known as World Fish Migration Day (WFMD).

Begun in 2014, WFMD 2016 was celebrated this year by over 2,000 organizations hosting events at 450 locations in 63 countries worldwide. These events started

In 2016, Hawaiians donated nearly 34,000 hours in Service-supported projects that are restoring freshwater streams, fishponds, anchialine pools, and other waterbodies on Maui, Kauai, the Big Island, and Oahu.

But the Fish and Aquatic Conservation Program's role in supporting WFMD didn't end near the International Dateline. Spring Creek, Little White Salmon, and Dworshak National Fish Hatcheries used social media and community outreach events like the Nez Perce Tribe's Environmental Education – Cultural Knowledge Day to highlight Service efforts to propagate, conserve, protect, and restore populations of steelhead, Chinook salmon, and bull trout.



Hawaii goby (O'opu Nopili) Photo: Gordon Smith/USFWS

Local efforts dovetailed with a national Fish and Aquatic Conservation Program campaign to learn more about native migratory fish and fish passage via the agency's new Migration Station website. So while the United States may have over six million human-made barriers to fish migration, one of the biggest was addressed during WFMD 2016: getting people to think—and maybe someday act—to ensure fish migration is more than a day of celebration.

Using the Power of Collaboration to Combat a Dangerous Fish Parasite

A Service-coordinated coalition has moved closer to solving a fish health dilemma bedeviling fisheries managers responsible for Deschutes River Basin spring Chinook populations.

A three-year study concluded in 2016 examined the impacts of *Ceratonova shasta* (*C. shasta*), a naturally-occurring microscopic fish parasite that can cause lethal organ damage to infected fish. In 2014, Service biologists discovered elevated levels of *C. shasta* in adult spring Chinook returning to Warm Springs National Fish Hatchery, around the same time large numbers of juvenile hatchery fish were disappearing shortly after their release.

Field research and lab investigations coordinated between the Service,

Confederated Tribes of the Warm Springs Reservation, Oregon Department of Fish and Wildlife, Pacific Gas and Electric, and Oregon State University revealed that Deschutes River Basin *C. shasta* levels had indeed become high enough to kill both juvenile and adult Chinook.

The study and its results are helping inform management decisions on how to maximize juvenile Chinook survival after fish releases and better manage river water temperatures. It's also demonstrated how collaboration is the key to conserving a culturally and economically important salmon run in one of Oregon's iconic river basins.



Kevin Blueback, a Warm Springs National Fish Hatchery employee and member of the Confederated Tribes of Warm Springs, with hatchery spring Chinook for spawning.
Photo: Roger Sorensen/USFWS

Pollinator Gardens Proliferate Across Service Hatcheries

In 2016, three National Fish Hatcheries (NFHs) installed or expanded pollinator gardens on hatchery property. Eagle Creek NFH in Estacada, OR, Hagerman NFH in Hagerman, ID, and Leavenworth NFH in Central Washington, collectively added more than 5,000 square feet of garden space dedicated to both conserving and raising awareness about the value of native pollinators in area ecosystems.

important: pollinators help more than 75% of the world's flowering plants produce the fruits, nuts, and berries people and wildlife depend upon.

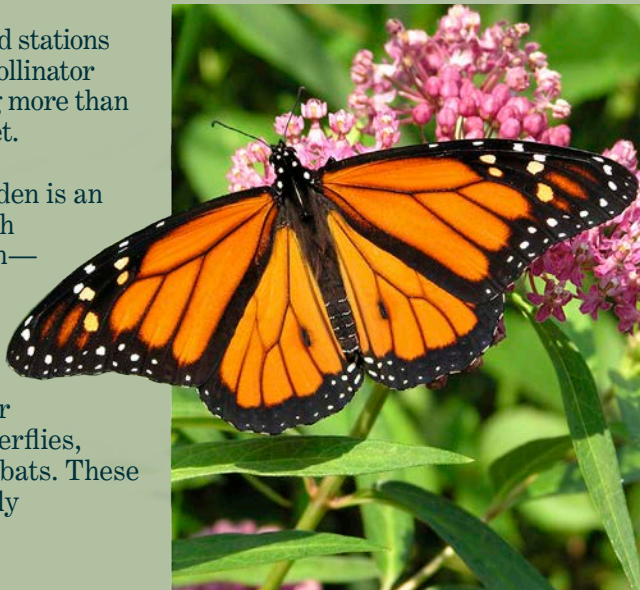
They also benefit aquatic species by reducing the need for outdoor watering and chemicals normally used to maintain lawns. Because the gardens have been planted with community assistance, they've helped forge new partnerships between the Service and

local organizations like Gooding County (Idaho) Master Gardeners, the Boy Scouts, and AmeriCorps. Hatchery staff have also noticed a reduction in summer grounds maintenance, making pollinator gardens a win-win for birds, bees, fish, and people.

Left: A Monarch butterfly on showy milkweed. Right: Eagle Creek NFH staff and volunteers installing native plants in the hatchery's new pollinator garden.
Photos: USFWS; Charlie Pelizza/USFWS

In all, seven Pacific Region Fish and Aquatic Conservation field stations now host seven pollinator gardens covering more than 18,000 square feet.

A pollinator garden is an area planted with native vegetation—and sometimes ornamental plants—designed to attract pollinator species like butterflies, bees, birds, and bats. These species are vitally





Conservation Return on Investment

A 'Forgotten Fish' Takes Center Stage in Conservation

For Pacific lamprey, long a 'forgotten fish' in the conservation conversation, 2016 was the year the species swam back into the spotlight.

In June, The Pacific Lamprey Conservation Initiative got a major boost when the Affiliated Tribes of Northwest Indians voted unanimously to support establishment of a Pacific Lamprey Fish Habitat Partnership.

Adult Pacific lamprey also passed over the Bonneville Dam at a rate more than double the species' ten-year average. Regional Implementation Plans (RIPs), a cornerstone of a Pacific Lamprey Conservation Agreement, also hit a milestone: more than half of the 14 RIPs now have working or completed drafts, including all four of California's coastal Regional Management Units.

2016 also saw lamprey-friendly passage improvements at Horn Rapids and

Prosser diversion dams on Washington's Yakima River. On California's Eel River the Service, California Department of Fish and Wildlife, and Pacific Gas and Electric modified the Van Arsdale Fish Ladder to enable year-round lamprey passage. This allowed the use of a population monitoring system and Passive Integrated Tag technology to continuously monitor how frequently lamprey use the ladder.

Meanwhile, The U.S. Geological Survey and the Service initiated an innovative pilot project where eDNA (DNA that has been separated from the organism but can be collected from the environment) was used to analyze every site the Service had electrofished for lamprey throughout Washington's Chehalis and Nisqually River Basins. Study results will help scientists establish guidelines for how and where to conduct future surveys in other parts of the species' range.



Additionally in 2016, a collaborative study between the Service, the Bureau of Reclamation and the Tracy Fish Collection Facility (within California's Central Valley Project) installed fish screens, redesigned with lamprey-friendly material and a fish salvage protocol, that will not only protect lamprey at one of their most vulnerable life stages, but could have applications at other, similar facilities.

However, the most captivating 2016 story was when lamprey, for the first time in over a century, were discovered in

Washington's White Salmon and Elwha Rivers, five years after Condit and Elwha Dams, respectively, were removed. Both facilities had blocked upstream migration throughout the 20th Century, but in February and March juvenile and larval lamprey were spotted in both systems. The discoveries usher in a unique and exciting opportunity to observe and monitor Pacific lamprey naturally recolonizing once-inaccessible habitat.



Pacific lamprey are culturally and ecologically important in Western waterways. They use their mouths to scale waterfalls and hold on to rocks. Clockwise from top: Lamprey passage system at Bonneville Dam. Photo: © Pamplin Media Group; Lamprey ammocoetes. Photo: USFWS; Adult Pacific Lamprey. Photo: © Dave Herasimchuk/ Freshwaters Illustrated



Salmon in the Classroom Gives Northwest Students a 'Fish-Eye' View of the Salmon Lifecycle

For over 25 years, Fish and Aquatic Conservation Program (FAC) stations have brought the salmon life cycle directly into Pacific Northwest elementary schools through Salmon in the Classroom (SIC), a program that has reached at least 30,000-35,000 students. In 2016, a dozen FAC stations worked with partners, volunteers and nearly 80 Pacific Northwest schools—a new program high—to bring live salmon eggs ready to hatch into a classroom environment.

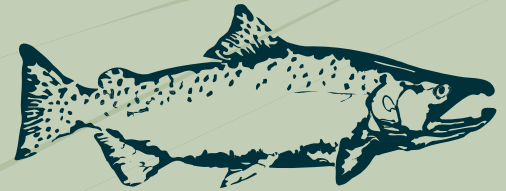
The SIC program gives students a hands-on education on how salmon and steelhead grow in and adapt to their habitat, the challenges they will face as they migrate to and from the ocean, and how hatcheries work to provide sustainable fisheries and help rebuild salmon runs. It also gives students,



teachers, and parents a glimpse at something few get to see up close: how baby salmon survive in their earliest most vulnerable days.

Boise-Eliot/Humbolt fourth-graders dissect a salmon as part of the Service's Salmon in the Classroom program.

Photo: Megan Kearney/USFWS



Shocking New Technique May Help Restore Malheur Lake

How do you reduce the population of an invasive species with numbers in the millions and that's decimating one of the West's most important lakes for waterfowl?

That's just one of the challenges the Service and partners have been facing at Malheur Lake in southeast Oregon. Since Common Carp were introduced in the 1950s, waterfowl production at Malheur National Wildlife Refuge has dropped to 25% of historic levels due to the carp's aggressive consumption of the lake's emergent aquatic vegetation. While recent, redoubled efforts to use commercial fishing is starting to have an effect, successful, long-term Common Carp management will require removing fish at different life stages.

Service fisheries biologists have come up with a novel and cost effective solution: using electricity at just the right dose to lethally zap carp embryos.

In 2016, researchers completed a pilot study at the Refuge to determine what types of electroshocker currents and broadcast ranges most effectively

neutralize Common Carp eggs. The results could empower and amplify existing carp control efforts. The Service plans to use the approach in future treatments in both Malheur Lake and interconnected waterbodies, hopefully with shockingly-effective results.



Invasive Common Carp (right) have caused extensive damage to Malheur Lake for more than 50 years.
Photo: USFWS

Driven by Science

Collecting Sound Data for Long-Term Aquatic Conservation

How do you monitor the long-term effects of climate change on aquatic habitats across three states? It's one of the many challenges Pacific Northwest National Wildlife Refuges face in an era where climactic changes in rainfall patterns and air temperature could have unforeseen impacts.



Service biologists surveying fish populations at Little Pend Oreille National Wildlife Refuge. Photo: USFWS

Beginning in 2014, the Service initiated a pilot project to develop a long-term aquatic monitoring program across a range of Refuges. The goal is to evaluate potential effects of climate change over time by monitoring physical features of streams (e.g., temperature, flow, and habitat) and associated changes in aquatic species. The results will help Refuges track aquatic changes and adapt necessary management actions.

There are 45 National Wildlife Refuges in Idaho, Oregon, and Washington. Their streams, rivers, and lakes provide habitat for cold water fish, federally-protected bull trout, salmon, steelhead and other aquatic organisms like amphibians and native freshwater mussels.

After numerous site visits and extensive GIS analysis, biologists selected five sentinel sites to study:

Kootenai (Idaho), Little Pend Oreille (Washington), Willapa (Washington), William Finley (Oregon) and Malheur (Oregon).

The data collection methods were designed to be robust and scientifically-credible. Biologists are using guidance developed by the U.S. Environmental Protection Agency (EPA) to continuously measure water temperature and stream flow. Habitat surveys are being conducted using EPA's Environmental Monitoring and Assessment Program (EMAP) methods.

After the third field season ends in 2018, the Service will assess the study's sustainability, logistical

constraints, and performance to develop recommendations for long-term implementation.

How long will we need to monitor to assess changes? Most fish generations span 4-10 years, so monitoring over decades may be required. But changes can be observed on shorter timescales, too, and already have been.

At Little Pend Oreille NWR in summer 2016, scientists discovered an abundance of recently invading pumpkinseeds (a type of sunfish). Refuge staff found the source at a lake where Rotenone had been applied in recent years. While climate change wasn't the culprit for the pumpkinseed population boom, its persistence and how the other species (rainbow, brook, and brown trout, sculpins and western



Western pearlshell mussels and a stickleback sculpin. Photo: Roger Tabor/USFWS

pearlshell mussels) respond to the new competitor will be influenced by future stream temperatures.

In an era when rapidly-changing environmental conditions will require focused and tactical conservation efforts, generating meaningful, scientific data is vital for understanding and instituting effective stewardship. It also reinforces a Service commitment to long-term cross-program collaboration, which will be a key to sustaining the more-than-a-century conservation legacy National Wildlife Refuges provide to the nation's wildlife, habitat, and people.

Protecting a Clearwater Basin Treasure

Dworshak National Fish Hatchery (NFH) has historically relied on water pumped from the Clearwater River. Unfortunately, salmon and steelhead returning to the Clearwater River from the Pacific Ocean often carry a virus known as infectious hematopoietic necrosis virus, or IHNV. The virus can enter the hatchery with the pumped water, and cause serious losses in juvenile steelhead.

Hatchery managers noted that nearby Clearwater State Hatchery does not have losses from IHNV. The State of Idaho (State) agreed to share some of their water source with Dworshak NFH.

U.S. Geological Survey (USGS) scientists found, while the IHNV virus is present in the Clearwater for most of

the year, the strain of the virus most dangerous to steelhead is only present during the first few months of juvenile rearing.

The State now shares IHNV-free water with Dworshak NFH when the fish are in the first stages of life. As fish grow and the State needs its full water supply, the Service's hatchery switches over to its Clearwater River source when the dangerous strain of IHNV is seasonally absent.

Thanks to collaboration between the Service, the Tribe, the State, and the USGS, IHNV has not caused significant losses of steelhead at Dworshak NFH in recent years.



Dr. Marilyn "Guppy" Blair studying the IHN virus.
Photo: USFWS



Adult Steelhead
Photo: USFWS

Prioritizing Fish Passage Barrier Improvements in Western Washington

Scientists, tribes, and conservation agencies have a new, landscape-level tool to address and hopefully help reverse declines to western Washington salmon populations.

Federal agencies in 2016 completed a first-ever strategic effort to assess, prioritize, and lay plans to strategically remedy 80 fish passage barriers identified on federal lands in Puget Sound and Washington Coast watersheds. Lack of access to high-quality upstream spawning and rearing habitat is one of the major challenges inhibiting restoration and recovery of the region's coho, chum and Chinook salmon, steelhead, and bull trout populations.

The Service conducted assessments at 61 sites over two years, using a two person crew supported by the National Fish Passage Program and U.S. Forest Service's 'Service First' Program. Service staff also designed and implemented the assessment protocols, paralleling efforts by the Washington Department of Fish and Wildlife to assess passage barriers on state-owned lands.

By using the same protocols and a similar framework, federal, state, and tribal agencies now will not only be able to plan across jurisdictional boundaries, but also leverage funding to ensure the barriers most in need of remediation or removal are addressed in the most effective order.



Norris Yeast, an Operation Warfighter volunteer, measures water depth at a culvert outlet in Washington's Mt. Baker Snoqualmie National Forest.
Photo: Zach Moore/USFWS

U.S. Department of the Interior
U.S. Fish & Wildlife Service

For additional details, see the online report:
<http://bit.ly/2kRDahs>

Fish and Aquatic Conservation, Pacific Region
503/872 2763

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*Front Cover: Chinook salmon at Dagger Falls,
Middle Fork Salmon River, Idaho*
Photo: Enrique Patino/NOAA-Fisheries

*Back Cover: Tribal Chinook salmon harvest on
Washington's Klickitat River*
Photo: Ryan Hagerty/USFWS